

**DEPARTMENT OF COMMUNITY SERVICES
PLANNING DIVISION
TOWN OF WEST HARTFORD
50 SOUTH MAIN STREET
WEST HARTFORD, CT 06107-2431
TEL: (860) 561-7555 FAX: (860) 561-7504
www.westhartford.org**

PERMIT APPLICATION FOR INLAND WETLANDS & WATERCOURSES
ACTIVITY: (check one of the following)

 MAP AMENDMENT X REGULATED ACTIVITY

File # 1050 Application Fee \$302 Surcharge Fee \$60 Date Received 11-10-16

Street Address of Proposed Application: See attached sheets

Zone: See attached Acreage/Lot Area: See attached Parcel/Lot#: See attached

Applicant's Interest in Property: See attached

Brief Description of Proposed Activity: See attached

The undersigned warrants the truth of all statements contained herein and in all supporting documents to the best of his/her knowledge and belief. Furthermore, the applicant agrees that submission of this document constitutes permission and consent to Commission and Staff inspections of the site. *Note: Notice is hereby given the Connecticut Department of Public Health must be notified by applicants for any project located within a public water supply aquifer protection area or watershed area. (CTDPH website at <http://www.dph.state.ct.us>)*

See attached
Record Owner's Name

Andrew Perham *for MDC*
Applicant's Name

Street

555 Main Street
Street

City _____ State _____ Zip _____

Hartford	CT	06103
City	State	Zip

Telephone #

860-278-7850 Ext.3449
Telephone #

Contact Person:

Sankar Ganesh
Name

Applicant's Signature For MOC

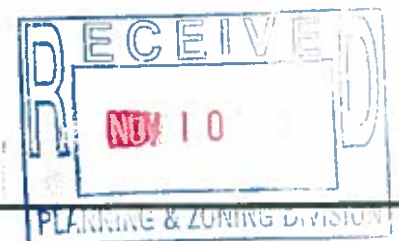
500 Enterprise Dr. #1A
Street

See attached
Signature of Owner/Authorized Agent

Rocky Hill	CT	06067
City	State	Zip

860-263-5794 sankar.ganesh@aecom.com
Telephone # E-Mail

U:\sd\TPZ\Templates\IWWA Permit Application April13



OWNERS AUTHORIZATION FORM

File # _____ Application Fee _____ Surcharge Fee _____ Date Received _____

Street Address 107 Hillcrest Avenue

Lot or Parcel # 2701 1 107 0001 Acreage/Lot Area 9.50 Zone RM-3

Applicant's Interest in Property: Applicants proposed infrastructure (NTS HOR)
is located within the property designated as upland review area.

Brief Description of Proposed Activity: Construction of Newington
Trunk Sewer High Outlet Relief (NTS HOR) Structure.

The undersigned warrants the truth of all statements contained herein and in all supporting documents to the best of his/her knowledge and belief. Furthermore, the applicant agrees that submission of this document constitutes permission and consent to Commission and Staff inspections of the site. *Note: Notice is hereby given the Connecticut Department of Public Health must be notified by applicants for any project located within a public water supply aquifer protection area or watershed area. (CTDPH website at <http://www.dph.state.ct.us>)*

CENTRAL CONNECTICUT ASSOCIATES LLC

See Cover Sheet

Record Owner's Name

Applicant's Name

365 LEDYARD STREET

Street

Street

HARTFORD CT 06114

City State Zip

City State Zip

860-231-8080 x-21

Telephone #

Telephone #

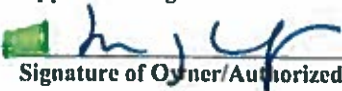
Contact Person:

See Cover Sheet

Name

Applicant's Signature

Street


Signature of Owner/Authorized Agent

City State Zip

Telephone #

E-Mail



AECOM
500 Enterprise Drive
Suite 1A
Rocky Hill, CT 06067
www.aecom.com

860 263 5800 tel
860 263 5777 fax

November 3, 2016

Todd Dumais, Town Planner
West Hartford Town Hall
50 South Main Street, Room 214
West Hartford, CT 06107



Subject: Application to conduct regulated activities within upland review boundary at the property located in 107 Hillcrest Ave for the Metropolitan District (MDC) South Hartford Conveyance and Storage Tunnel (South Tunnel)

Dear Mr. Dumais,

On Behalf of the Applicant, the Metropolitan District (MDC), AECOM is pleased to submit this Town of West Hartford Inland Wetlands and Watercourses (IWWC) Permit Application (Application) for regulated activities in the subject location. Regulated activity at 107 Hillcrest Avenue will be due to the construction of Newington Trunk Sewer High Outlet Relief (NTS HOR) structure. See Attachment "A" for site location.

The location where the NTS HOR structure is proposed to be constructed within the 107 Hillcrest Avenue property, is a densely vegetated area with trees and shrubs. The NTS HOR location is a Sanitary Sewer Overflow (SSO) location which should be eliminated by year 2023, based on consent order from the EPA. The NTS HOR sluice gate to the creek will remain closed. However during extreme rainfall events, it will manually be open by MDC operations personnel and serve as a relief point to discharge SSO's to Piper Brook, to prevent basement flooding and damages to goods for homeowners nearby.

No direct impacts to wetland or watercourse resources will occur as a result of the proposed modification plan. The majority of the disturbances associated with the proposed activities are within the 150 foot upland review area of a nearby wetland system. The southern boundary on an unnamed tributary to Piper Brook wetland system is located within 10 feet of the NTS HOR site. As such, proposed modifications within the upland review area are regulated by the Town of West Hartford Inland Wetland and Watercourses Agency (Agency). Please see Attachment C for a detailed Wetland Report.

A completed Town of West Hartford Application Form and Connecticut Department of Energy and Environmental Protection (CT DEEP) Reporting Forms are enclosed. Details regarding the wetland resource and proposed regulated activities are provided below.

Proposed Regulated Activities:

Construction activities at NTS HOR Site includes clearing and grubbing for construction of an underground structure built on existing 42" Newington trunk sewer. The NTS HOR site currently a densely vegetated area with trees and shrubs. Providing a work zone in this area will require removal of vegetation/trees and disruption of the area. Post construction, the



whole site will be restored with 6" loam and seed and all trees and shrubs removed will be restored in kind. Since the proposed NTS HOR structure has to be constructed in the existing overflow location, no other site that can be utilized for this activity. Construction Activity plans are shown in Attachment "B"

Erosion and Sediment Controls:

Sediment arising from construction activities will be contained by one or more of the following erosion control measures: silt fence and providing stabilized construction entrances where applicable. The contractor shall be responsible for ensuring that all erosion control measures are configured and constructed in a manner that will minimize erosion and prevent the transport of sediments. Temporary erosion and sediment control measures shall conform to the Best Management Practices as specified in the latest edition of the "Connecticut Guidelines for Soil Erosion and Sediment Control" and shall be designed to minimize the siltation of stormwater runoff, sedimentation of adjacent facilities, and contamination of the wetlands.

Wetland Impact Analysis:

No direct impacts to nearby wetlands or watercourses will occur as a result of the proposed modifications. Work will only be taking place within the 150 foot upland review area. There is potential for indirect impacts to wetlands, but these impacts will be avoided and minimized through the use of construction Best Management Practices, (BMPs). Specific BMPs that will be utilized include:

- silt fencing
- stabilized construction entrance in ingress/egress points.

Disturbed soils associated with slope restoration activities will be temporarily stabilized with erosion control blankets and permanently stabilized with vegetative cover. Due to unchanged conditions between pre and post construction landscape, there will not be a discernable change to the quality of stormwater leaving at both the locations. As such, the proposed modifications will not result in a "significant impact" to nearby wetlands, as defined in Section 2 of the Town of West Hartford Inland Wetland and Watercourses Regulations.

Summary:

No direct impacts to inland wetland resource areas will occur as a result of the proposed activities. The proposed activities are located within the regulated 150-foot upland review area of wetlands. Construction activities on the site include construction of NTS HOR structure to discharge overflow to Piper Brook during extreme rainfall events when the Tunnel has reached its capacity. These activities are expected to have negligible impact to



stormwater quality and quantity leaving the sites. Believing this project to have no adverse impact to wetland resources; the MDC requests that the Town of West Hartford Inland Wetland and Watercourses Agency review this application. It is believed that this proposal for site protects the interests of the Inland Wetlands and Watercourses Act and Regulations.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sankar', is written over a horizontal line.

Sankar Ganesh, P.E
Project Engineer



STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Pursuant to section 22a-39(m) of the General Statutes of Connecticut and section 22a-39-14 of the Regulations of Connecticut State Agencies, inland wetlands agencies must complete the Statewide Inland Wetlands & Watercourses Activity Reporting Form for each action taken by such agency.

This form may be made part of a municipality's inland wetlands application package. If the municipality chooses to do this, it is recommended that a copy of the Town and Quadrangle Index of Connecticut and a copy of the municipality's subregional drainage basin map be included in the package as well.

Please remember, the inland wetlands agency is responsible for ensuring that the information provided is accurate and that it reflects the final action of the agency. Incomplete or incomprehensible forms will be mailed back to the agency. Instructions for completing the form are located on the following page.

The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). **Do not** mail this cover page or the instruction page. **Please mail only the completed yellow reporting form to:**

Wetlands Management Section
Inland Water Resources Division
Department of Energy & Environmental Protection
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Wetlands Management Section at (860) 424-3019.

INSTRUCTIONS FOR COMPLETING THE STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Use a separate form to report each action taken by the Agency. Complete the form as described below.

PLEASE PRINT CLEARLY

PART I: To Be Completed By the Inland Wetlands Agency Only

1. Enter the year and month the Inland Wetlands Agency took the action being reported. If multiple actions were taken regarding the same project or activity then multiple forms need to be completed. Enter ONE year and month per form.
2. Enter ONE code letter to describe the final action or decision taken by the Inland Wetlands Agency. *Do not submit a reporting form for withdrawn applications.* Do not enter multiple code letters (for example: if an enforcement notice was given and subsequent permit issued - two forms for the two separate actions are to be completed).
 - A = A Permit Granted by the Inland Wetlands Agency (*not including map amendments, see code D below*)
 - B = Any Permit Denied by the Inland Wetlands Agency
 - C = A Permit Renewed or Amended by the Inland Wetlands Agency
 - D = A Map Amendment to the Official Town Wetlands Map - or -
An Approved/Permitted Wetland or Watercourse Boundary Amendment to a Project Site Map
 - E = An Enforcement Notice of Violation, Order, Court Injunction, or Court Fines
 - F = A Jurisdictional Ruling by the Inland Wetlands Agency (i.e.: activities "permitted as of right" or activities considered non-regulated)
 - G = An Agent Approval pursuant to CGS 22a-42a(c)(2)
 - H = An Appeal of Agent Approval Pursuant to 22a-42a(c)(2)
3. Check "Yes" if a public hearing was held in regards to the action taken; otherwise check "No".
4. Enter the name of the Inland Wetlands Agency official verifying that the information provided on this form is accurate and that it reflects the FINAL action of the agency.

PART II: To Be Completed by the Inland Wetlands Agency or the Applicant - If Part II is completed by the applicant, the applicant must return the form to the Inland Wetlands Agency. The Inland Wetlands Agency must ensure that the information provided is accurate and that it reflects the FINAL action of the Agency.

5. Enter the name of the municipality for which the Inland Wetlands Agency has jurisdiction and in which the action/project/activity is occurring.

Check "Yes" if the action/project/activity crosses municipal boundaries and enter the name(s) of the other municipality(ies) where indicated. Check "No" if it does not cross municipal boundaries.
6. Enter the USGS Quad Map name or number (1 through 115) as found on the Connecticut Town and Quadrangle Index Map (the directory to all USGS Quad Maps) that contains the location of the action/project/activity. See the following website for USGS Quad Map names and numbers:
http://ct.gov/deep/lib/deep/gis/resources/Index_NamedQuadTown.pdf

ALSO enter the four-digit identification number of the corresponding Subregional Drainage Basin in which the action/project/activity is located. If the action/project/activity is located in more than one subregional drainage basin, enter the number of the basin in which the majority of the action/project/activity is located. Town subregional drainage basin maps can be found at UConn – CLEAR's website: http://clear.uconn.edu/data/map_set/index.htm
7. Enter the name of the individual applying for, petitioning, or receiving the action.
8. Enter the name and address or location of the action/project/activity. Check if the the action/project/activity is TEMPORARY or PERMANENT in nature. Also provide a brief description of the action/project/activity.

9. **CAREFULLY REVIEW** the list below and enter ONE code letter which best characterizes the action/project/activity. All state agency projects must code "N".

- | | |
|---|---|
| A = Residential Improvement by Homeowner | I = Storm Water / Flood Control |
| B = New Residential Development for Single Family Units | J = Erosion / Sedimentation Control |
| C = New Residential Development for Multi-Family / Condos | K = Recreation / Boating / Navigation |
| D = Commercial / Industrial Uses | L = Routine Maintenance |
| E = Municipal Project | M = Map Amendment |
| F = Utility Company Project | N = State Agency Project |
| G = Agriculture, Forestry or Conservation | P = Other (this code includes the approval of |
| H = Wetland Restoration, Enhancement, Creation | concept plans with no-on-the-ground work) |

10. Enter between one and four code numbers to best characterize the project or activity being reported. Enter "NA" if this form is being completed for the action of map amendment. You must provide code 12 if the activity is located in an established upland review area (buffer, setback). You must provide code 14 if the activity is located BEYOND the established upland review area (buffer, setback) or NO established upland review area (buffer, setback) exists.

- | | |
|---|--|
| 1 = Filling | 8 = Underground Utilities (no other activities) |
| 2 = Excavation | 9 = Roadway / Driveway Construction |
| 3 = Land Clearing / Grubbing (no other activity) | 10 = Drainage Improvements |
| 4 = Stream Channelization | 11 = Pond, Lake Dredging / Dam Construction |
| 5 = Stream Stabilization (includes lakeshore stabilization) | 12 = Activity in an Established Upland Review Area |
| 6 = Stream Clearance (removal of debris only) | 14 = Activity in Upland |
| 7 = Culverting (not for roadways) | |

Examples: Jurisdictional ruling allowing construction of a parking lot in an upland where the municipality *does not* have an established upland review area must use code 14; other possible codes are 2 and 10. Permitted construction of a free standing garage (residential improvement by homeowner) partially in an established upland review area with the remainder in the upland must use code 12 and 14; other possible codes are 1 and 2. Permitted dredging of a pond must use code 11; other possible codes are 12 and 5.

11. Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. For PERMANENT alterations, enter in acres the area of wetland soils or watercourses altered. Include areas that are permanently altered, or are proposed to be, for all agency permits, denials, amendments, and enforcement actions. For those activities that involve filling or dredging of lakes, ponds or similar open water bodies enter the acres filled or dredged under "open water body". For those activities that involve directly altering a linear reach of a brook, river, lakeshore or similar linear watercourse, enter the total linear feet altered under "stream". Remember that these figures represent only the acreage altered not the total acreage of wetlands or watercourses on the site. You MUST provide all information in ACRES (or linear feet as indicated) including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. Enter zero if there is no alteration.
12. Enter in acres the area of upland altered as a result of an ACTIVITY REGULATED BY the inland wetlands agency, or as a result of an AGENT APPROVAL pursuant to 22a-42a(c)(2). Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. Include areas that are permanently altered, or proposed to be permanently altered, for all agency permits, denials, amendments, and enforcement actions. Inland wetlands agencies may have established an upland review area (also known as a buffer or setback) in which activities are regulated. Agencies may also regulate activities beyond these established areas. You MUST provide all information in ACRES including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. Enter zero if there is no alteration. Remember that these figures represent only the upland acreage altered as a result of an activity regulated by the inland wetlands agency, or as a result of an agent approval.
13. Enter the acres that are, or are proposed to be, restored, enhanced or created for all agency permits, denials, amendments, and enforcement actions. NOTE restored or enhanced applies to previously existing wetlands or watercourses. Created applies to a non-wetland or non-watercourse area which is converted into wetlands or watercourses (question #10 must provide 12 and/or 14 as an answer, and question #12 must also be answered). You MUST provide all information in ACRES including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. Enter zero if there is no restoration, enhancement or creation.

PART III: To Be Completed By The DEEP - Please leave this area blank. Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street – 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

1. DATE ACTION WAS TAKEN (enter one year and month): Year _____ Month _____
2. ACTION TAKEN (enter one code letter): _____
3. WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(type name) _____ (signature) _____

PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (type name): West Hartford
Does this project cross municipal boundaries (check one)? Yes X No _____
If Yes, list the other town(s) in which the action is occurring (type name(s)): Newington
6. LOCATION (see directions for website information): USGS Quad Map Name: Hartford South or Quad Number: 52
Subregional Drainage Basin Number: 4403
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): The Metropolitan District (MDC)
8. NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): 9, 61 & 107 Hillcrest Avenue
Briefly describe the action/project/activity (check and type information): Temporary X Permanent _____
Description: Construction of NTS HOR structure and 36" consolidation sewer by Microtunneling
9. ACTIVITY PURPOSE CODE (enter one code letter): E
10. ACTIVITY TYPE CODE(S) (enter up to four code numbers): 12 10 2 _____
11. WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated):
Wetlands: 0.0 acres Open Water Body: 0.0 acres Stream: 0.0 linear feet
12. UPLAND AREA ALTERED (type in acres as indicated): _____ acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 0.0 acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

Town of West Hartford
50 South Main Street, Room 214
West Hartford, CT 06107

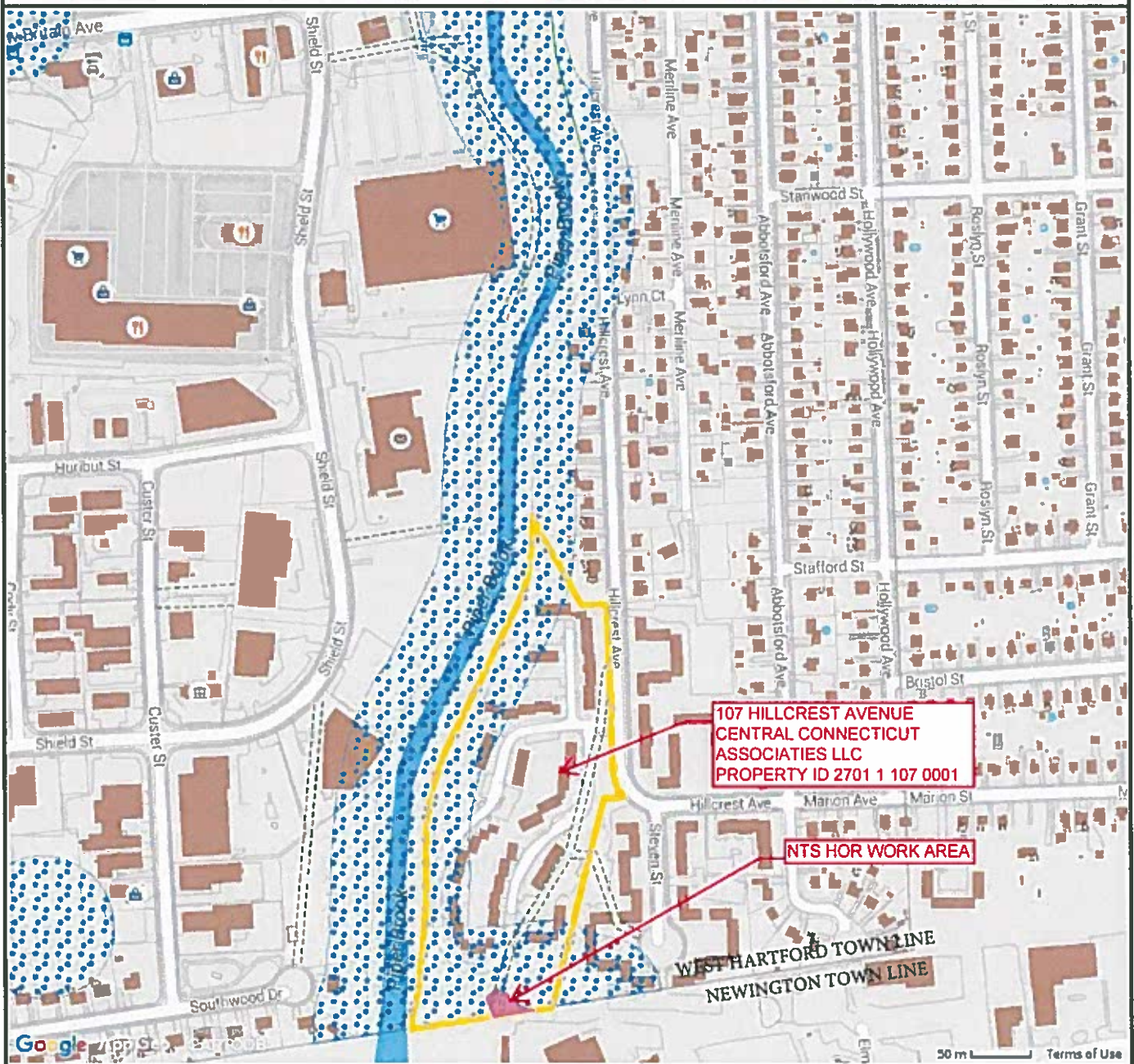
Wetland Application Fees
Construction at NTS HOR location

IWW				
DEEP FEE				\$ 60.00
Inland Wetland Application				
IWW area =	6,500	SF		
IWW Regulated Activity (3,000 - 50,000 SF)				
\$ 120.00	plus	\$ 28.00	X	6.50
				\$ 302.00
Total Permit Fee				\$362.00

Attachment A

West Hartford GIS Mapping / Project Location

Project Location



Property Information

Property
ID
Location
Owner



MAP FOR REFERENCE ONLY NOT A LEGAL DOCUMENT

Town of West Hartford, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 5/22/2015
Properties updated Daily

Map Theme Legends

Wetlands

- Wetlands
- Wetlands

Added Wetlands

Deleted Wetlands

Developed Wetlands
- Regulated Wetlands
- 150' Regulated Wetlands

Attachment B

Construction Activity Plans

Attachment C

Wetland Delineation Report

Technical Memorandum

**MDC South Hartford Conveyance and Storage
Tunnel – Steven Street/North Mountain Road**

Newington/West Hartford, Connecticut

Wetland Delineation Report

Prepared under contract to:

AECOM

For:

The Metropolitan District Commission

By:

**FITZGERALD & HALLIDAY, INC.
416 Asylum Street
Hartford, CT 06103**

April 2016



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1.0 INTRODUCTION

Fitzgerald & Halliday, Inc. (FHI) was retained by AECOM to identify and delineate wetlands and watercourses that may be impacted by work related to the construction activity associated with the Metropolitan District Commission (MDC) South Hartford Conveyance and Storage Tunnel in the towns of West Hartford and Newington, Connecticut (see Figure 1 – Study Area). The wetland investigation was confined to the area between Steven Street in West Hartford and North Mountain Road in Newington, outlined by the red polygon on Figure 1.

The entire study area was investigated for the presence of wetlands and watercourses. Wetlands were delineated as well as portions of those wetlands that extended beyond the study area, to encompass potential staging and access areas that might be needed during future project construction activity. FHI soil scientist David Laiuppa conducted a preliminary determination on October 21st, 2015 and followed up with an in-season delineation on March 18, 2016. At the request of AECOM and the Town of Newington the spring delineation included a southerly extension of the wetland delineation review area.

Due to seasonal conditions that affect and/or limit vegetative growth habits and naturally unrestricted hydraulic flow patterns, the U.S. Army Corps of Engineers (USACE) recommends that wetland delineations ideally be performed during the wet portion of the growing season. USACE guidelines state that, in the event that preliminary wetland determinations are performed outside of the wet portion of the growing season, on-site investigations should subsequently be made during the following growing season in order to verify the preliminary boundary determinations to successfully conclude wetland delineation.

Because of climatic variations, growing season dates vary from region to region. USACE guidelines describe that the normal growing season is determined by above-ground growth and development of vascular plants and/or by soil temperature. It is generally accepted that the typical growing season for non-coastal communities in Connecticut begins in the last week of April and ends in the second week of October.

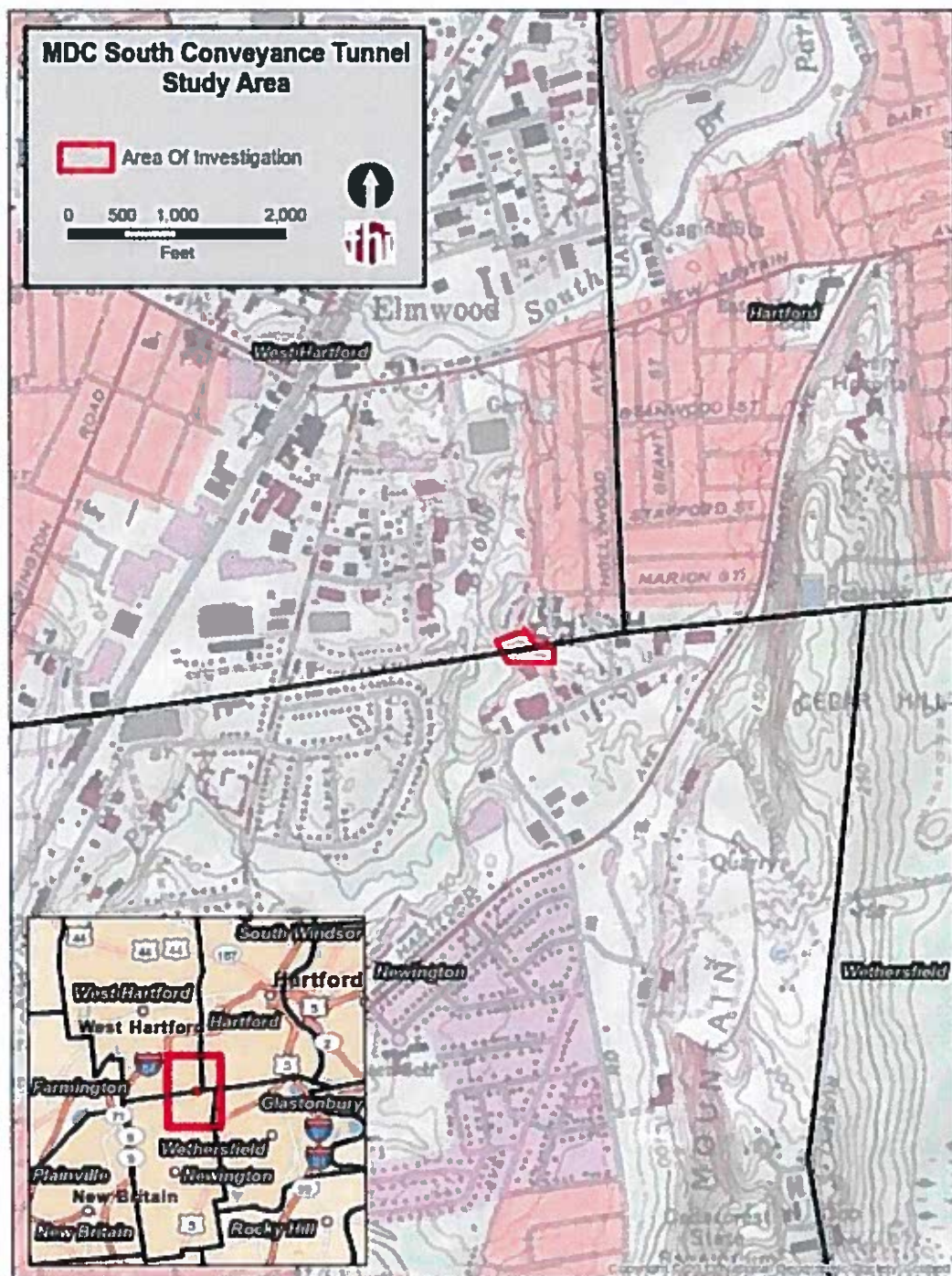


Figure 1 - Study Area

2.0 METHODS

FHI delineated wetland resources in accordance with state and federal definitions and guidelines. The identification of inland wetlands and watercourses, as regulated by Connecticut, were based upon the definitions contained in Section 22a-38 of the General Statutes of Connecticut. Connecticut inland wetland boundaries are determined by the limit of any of the soil types designated as poorly drained, very poorly drained, alluvial, and flood plain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (§22a-38-15). NRCS soil surveys were consulted to compare observed soil types to those generally expected in the project area. Hydric soils, which include both poorly and very poorly drained soils, were identified for conformance with the *Field Indicators for Identifying Hydric Soils in New England Version 3* (2004) and *Field Indicators of Hydric Soils in the United States, Version 7.0* (2010).

Federal wetlands were identified per the USACE 1987 *Wetland Delineation Manual* and the USACE 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region – Version 2.0*. The federal wetland boundary was determined by the limit of wetland vegetation (limit of plant community dominated, 50% or more cover, by species adapted to living in wetland conditions) by visual inspection, as well as indicators of hydric soils and wetland hydrology.

Wetland areas were marked in the field using consecutively-numbered flags along the wetland/upland interface. A hand-held GPS unit was used to document the location of each flag for the purposes of preparing a field sketch. The GPS lines in this report should not be used for engineering design purposes.

3.0 RESULTS

FHI's soil scientist flagged the boundaries of one (1) wetland within the project study area, identified by a single alpha-numeric flag line. The boundary of Wetland A ended in an open fashion because the wetland system continues beyond the project area; this is noted in the detailed description below.

FHI prepared field sketches for the delineated wetland using a hand-held GPS unit (Garmin GPS 62stc). FHI's delineation sketch sheet (useful only for reference, not for design) is depicted in Figure 2 – Wetland Delineation Sketch. Wetland delineation flags were located by instrument survey, conducted by others, for portrayal on engineering drawings and use during design.

The field work confirms and supports the NRCS mapped designation of Udorthents-Urban land complex within the developed portions of the study area, and Hinckley gravelly sandy loam and Limerick and Lim soils with wetland areas, floodplains. See Section 5.0 for the NRCS map and soils descriptions.



Figure 2 - Wetland Delineation Sketch

4.0 DETAILED WETLAND DESCRIPTIONS

The detailed description of the flagged wetland presented below includes information about the approximate location of the flag series, the wetland's connectivity to watercourses and adjacent wetlands, NRCS mapped soils, and dominant vegetation of the described wetland areas.

Wetland A (Flag Numbers A-1 to A-48)

Wetland A is a forested and scrub-shrub wetland located at the northern end of the project area and extending into a large floodplain associated with Piper Brook to the west, beyond the project area. A small, perennial watercourse flows through this wetland from east to west, and ultimately flows into Piper Brook. The watercourse receives waters from an outfall at the eastern end of the study area (see Photo 2 in Appendix A), adjacent to a parking lot. Additionally, the wetland and watercourse receive runoff from upland slopes to the north and south, leading down to the wetland and floodplain. This wetland extends to the west, beyond the limit of area of investigation, into the adjacent Piper Brook floodplain. Within the floodplain area there are two potential vernal pools (see Photos 3 and 4 in Appendix A). An elevated sewer main passes through the wetland, over the perennial watercourse (see Photo 1 in Appendix A).

This forested/scrub-shrub wetland is dominated by willows (*Salix spp.*), red maples (*Acer rubrum*), black locust (*Robinia pseudoacacia*), multiflora rose (*Rosa multiflora*), and silky dogwood (*Cornus amomum*) in the tree and shrub layers. There are also patches of common reed (*Phragmites australis*), and Japanese knotweed (*Polygonum cuspidatum*) in the herbaceous layer. The NRCS mapped soils adjacent to and within Wetland A are Hinckley gravelly sandy loam, Limerick and Lim soils, and Udorthents-Urban Land complex. Additionally, the disturbed soils within the wetland area can be described as Aquepts. The principal functions of this wetland are sediment/toxicant retention from adjacent land uses, minor floodflow alteration during extreme flood events of Piper Brook, and small scale wildlife habitat for urban wildlife and in the potential vernal pools.

5.0 NRCS MAPPED SOILS

The NRCS has published a series of soil surveys for most of the United States. The NRCS soil surveys are used to enhance understanding of, and to help describe a particular geographic area. These surveys have recently been updated for the State of Connecticut, and are available as a digital GIS layer. The soil surveys contain taxonomic descriptions of different soil series, as well as soil maps depicting soil map units.

NRCS soils classifications on the project site are depicted in Figure 3- NRCS Mapped Soils by their soils number. Only those on the project site are described below.

Hinckley Series (38E)

The Hinckley series consists of very deep, excessively drained soils formed in glaciofluvial materials. Surface runoff ranges from negligible to low. They are nearly level through very steep soils on terraces, outwash plains, deltas, kames, and eskers. Slope is generally 0 through 8 percent on the tops of the terraces, outwash plains and deltas. Slopes of 8 through 60 percent or more are on the kames, eskers and margins of the outwash plains, deltas, and terraces. The soils formed in glaciofluvial sand and gravel and are derived principally from granite, gneiss, and schist.

Limerick and Lim Soils (107)

Lim Series

The Lim series consists of very deep, poorly drained loamy soils formed in alluvial sediments. They are nearly level soils on flood plains and are subject to frequent flooding. Slope ranges from 0 to 3 percent. Saturated hydraulic conductivity ranges from moderately low to moderately high in the solum and high or very high in the substratum. Lim soils are nearly level soils on flood plains along low gradient rivers and streams. They are in relatively low areas. The soils formed in recent alluvium derived from a variety of crystalline and sedimentary rocks. Poorly drained. Surface runoff is negligible or low. Saturated hydraulic conductivity ranges from moderately low to moderately high in the solum and high or very high in the substratum. These soils flood frequently typically in the spring of each year.

Limerick Series

The Limerick series consists of very deep, poorly drained soils on flood plains. They formed in loamy alluvium. Saturated hydraulic conductivity is moderately high or high. Slope ranges from 0 to 3 percent. Limerick soils are on the flood plains of major rivers and their larger tributaries. In some places they are on the flood plains of small streams. They may be on broad flat areas or in shallow depressions. The soils formed in recent alluvial deposits that are dominantly silt and very fine sand. Most areas are flooded for periods of several days each year, usually in late winter or early spring.

Udorthent-Urban Land Complex (306)

These map units consist of moderately sloping to steep areas where the original soil has been cut away or covered with a gravelly fill material. Most of these areas have been graded to a smooth surface with 4 to 10 inches of topsoil. This soil is commonly located on outwash plains and moraines, but occurs in a variety of landscape positions. Soil permeability varies from moderate to very rapid. They typically possess depths of greater than 5-6 feet to bedrock and groundwater.

Udorthents – A map unit consisting of well-drained to excessively well-drained soil composed of cut areas, filled areas, or both. They are often in association with urban

areas. In areas that were cut, the surface layer has been removed and in fill areas, typically more than 20 inches of soil material has been placed on the surface. Often both cut and fill areas occur in close proximity as areas were often graded and smoothed forming a complex pattern of cuts and fills.

Urban Land: unit which are areas developed by buildings, roads, and other developments limiting the ability to inspect and map underlying soil types.

Udorthents, Flood Control (309)

Flood Control Udorthents consist of earthy materials that have been shaped or otherwise disturbed by man in order to form artificial levees. Most areas are in dams, levees, channels, or other flood control structures. Slopes range from nearly level to steep. Depth to bedrock is very deep. Drainage class is moderately well drained. Onsite investigations are required for interpretations.

Aquents

Aquents consist of earthy materials with an “aquic moisture regime” that have been shaped or otherwise disturbed by man. Slopes range from 0 to 25 percent. On-site investigations are required for interpretations.

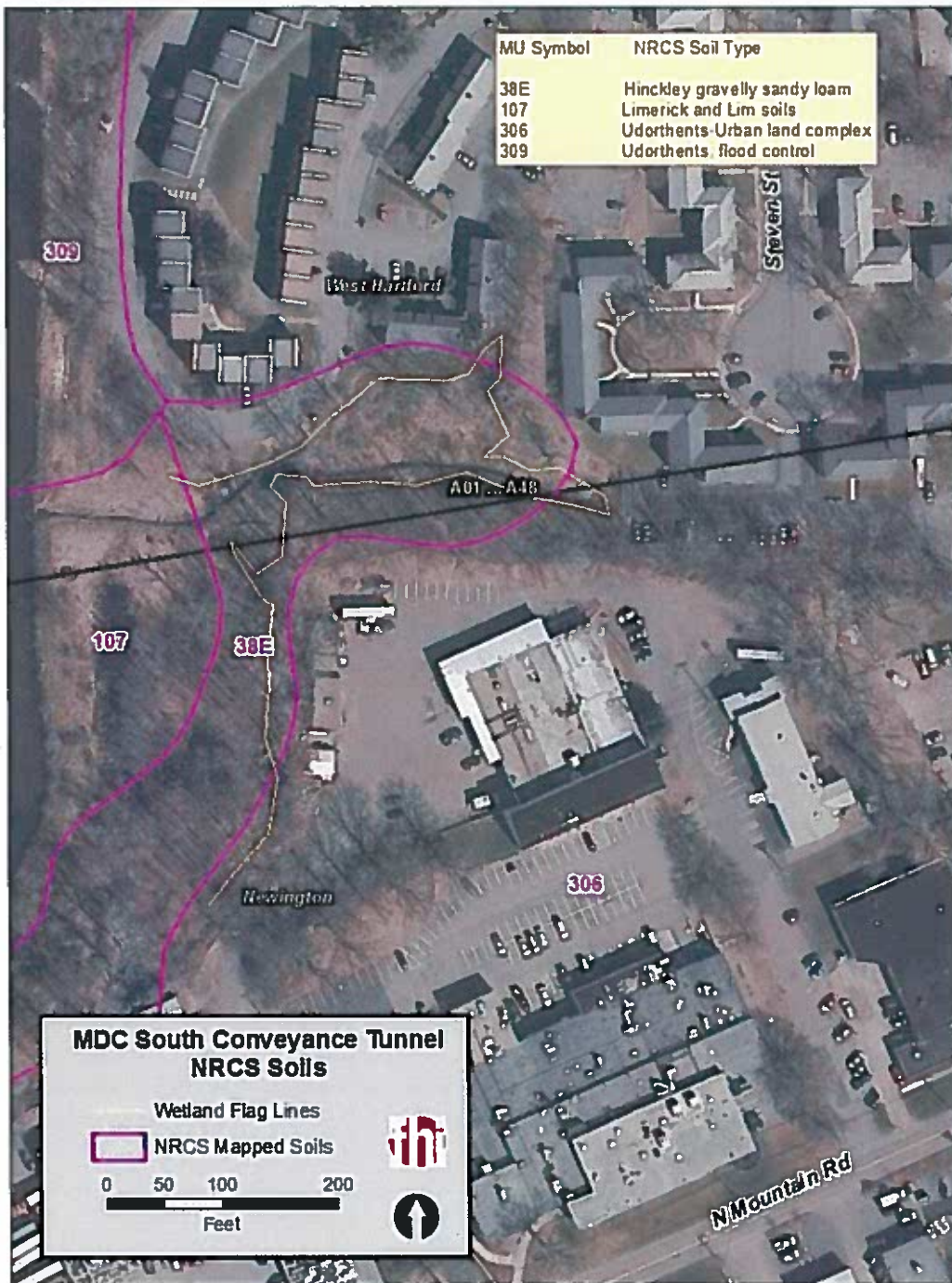


Figure 3 - NRCS Mapped Soils

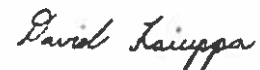
6.0 SUMMARY

FHI delineated wetland resources within the study area in accordance with both federal and state definitions and guidelines. One (1) wetland area was identified by flag series. The wetland meets the state and federal definitions constituting it as a regulated State and Federal Wetland, and the wetland boundary is coincident. The lands surrounding the wetland on the north, east, and south sides have all been disturbed by human activity, however, lands within the wetland offer a high value to the environmental communities which reside within it.

Wetland photographs are attached to this report in Appendix A.

Delineations carried out for this project are valid for a maximum of five years, depending on changing conditions as a result of cultural or environmental influences.

Respectfully submitted,



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APPENDIX A: WETLAND PHOTOGRAPHS



Photo 1: Wetland A (facing northeast)



Photo 2: Wetland A (facing east)